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PATENT SPECIFICATION



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PROVISIONAL SPECIFICATION.

Improvements in or Appertaining to Wringing or Mangling Machines.

I, ELLIS BOARDMAN, of 148, Clarence Street, Bolton, in the County of Lancaster (of British nationality), do hereby declare the nature of this invention to be as follows:—

This invention relates to improvements in wringing or mangling machines and in particular to the gearing between the rollers and the driving handle. It is well known in wringing machines that when the gearing wheels are exposed a source of danger is presented to the person operating the machine whilst if guards are employed these are often difficult to fix or unwieldy or liable to break on account of their large size, and the object of my invention is to overcome these disadvantages and I attain this object by the employment of epicyclic gearing completely enclosed within a case, the casing itself being comparatively small in size and containing the whole of the gearing parts.

In carrying this invention into effect I make use of a casing fixed to the frame of the machine the casing having a wall or flange upon which are formed internal gearing teeth. An opening is formed within the casing to allow the bush from a disc upon which are mounted pinions to take therethrough. The pinions are mounted upon studs fixed to or integral with the said disc. I preferably employ three such pinion wheels but I may employ more or less thereof as desired. Each of the said disc pinions gears with the internal peripheral teeth of the casing and also gears with a pinion rotating between the disc pinions, this central pinion being fixed to a second revolving disc. This second revolving disc has formed upon it or integral with

it studs similar to those on the first mentioned disc and upon each of these studs is pivoted a pinion of similar character to the disc pinions first mentioned. This second set of pinions which may be two or more in number engage with the teeth in the casing in similar manner to the other set of pinions and gearing between this second set is a driving wheel having teeth meshing therewith the said driving wheel being fixed to the driving shaft. The driven shaft, that is to say the roller shaft is keyed or otherwise fixed to a sleeve from the first mentioned disc. A covered plate fits snugly over the said casing being detachably fixed by screws or the like. It will be seen that the mode of operation is as follows:—

On turning the handle the pinion wheel fixed thereto is caused to revolve at any desired surface speed. The pinion wheels with which this wheel engages have therefore a corresponding surface speed and these pinions gearing with the internal teeth of the casing cause the disc upon which said wheels are mounted to revolve at a speed slightly less than the rate of change of position of the point of engagement of the pinion wheels with the teeth of the casing. This disc having at the other side of it a pinion wheel fixed to it causes this wheel to revolve with an angular velocity much less than that of the driving wheel and in the same way by the second set of pinions with their disc the roller shaft is given a correspondingly less angular velocity than the wheel which drives them.

Dated the 11th day of December, 1923.

SAMUEL HEY,
Agent.

[Price 1/-]

COMPLETE SPECIFICATION.

Improvements in or Appertaining to Wringing or Mangling Machines.

I, ELLIS BOARDMAN, of 148, Clarence Street, Bolton, in the County of Lancaster (of British nationality), do hereby declare the nature of this invention and in what manner the same is to be performed, to be particularly described and ascertained in and by the following statement:—

This invention relates to driving gear more particularly for wringing and mangling machines which are to be used for domestic purposes and which, as is well known, it is desirable to protect or cover so as to prevent damages by accidents to people using such driving gear, and further to the known type of gear by which rotary motion is transmitted from a toothed pinion rotating on a central shaft operating another toothed pinion which is mounted to rotate upon a stud or pin carried by a disc, so that this latter pinion by meshing with the internal teeth of a casing or wheel which is held against rotation, may transmit motion to said disc upon which it is mounted. My said invention consists in fixing a pinion centrally to the rotary disc previously made use of so that by this additional pinion I may transmit motion to another pinion mounted upon a second disc which is keyed to the shaft of the roller to which I wish to transmit motion and this motion I secure at the desired rates of speed by arranging the pinion of the second disc also to engage with the teeth of the internally toothed casing which is held against rotation. The internally toothed casing acts as a shield or guard for the gearing as well as means for effecting the lubrication of the moving parts.

To attain the object of my invention I make use of the devices illustrated by the accompanying sheets of drawings in which:—

Fig. 1 is an end elevation of the end frame of a wringing or mangling machine with the hand wheel shown as cut away.

Fig. 2 is a front elevation of the parts shown by Fig. 1 with the gear cover shown in section.

Fig. 3 is a plan of certain parts shown by Figs. 1 and 2.

Fig. 4 is a sectional elevation of the gearing and other parts drawn to an

enlarged scale so as to more clearly show the arrangement of my improved devices.

In carrying my invention into effect I make use of a casing *a* which by lugs *a*¹ and *a*² that are fixed to or formed integrally with it, is held against rotation by spanning projecting ribs 2 from the end frame 3 of the machine. It is obvious that instead of the casing *a* being held against rotation by the lugs *a*¹ and *a*² said casing may be bolted to any framework in connection with which my improved driving gear is made use of.

The casing *a* has an end cover *b* secured to it by screws or otherwise, so that the whole of the gearing is enclosed by said casing.

The central shaft 4 such as that of the roller 5 is made to extend centrally through the casing *a* in order that said shaft 4 may have keyed to it a disc 6 by means of said disc 6 having its hub 6*a* extending through the central opening in the side wall of the casing *a* to receive the key 4*a* as shown by Fig. 4.

The casing *a* has formed upon its interior surface the internal teeth *c* which are for gearing or meshing with one, two or more pinions 7. I have herein shown three of said pinions but it will be understood that only one might be employed or that more than three may be used.

These pinions 7 are mounted upon studs 8 which extend laterally from the disc 6, thus when said pinions are rotated as is hereafter described, they will travel over the internal teeth *c* of the casing 4 and will therefore carry with them their studs 8 and the disc so that as said disc 6 rotates, its rotary motion will be transmitted to the shaft 4 and consequently to the roller 5 of the machine.

Adjoining the pinions 7 is another disc 9 which is mounted to revolve loosely upon the shaft 4, and fixed on this disc is a central driving wheel 10 which revolves with said disc 9. Extending laterally from the disc 9 are the studs 11 upon which pinions 12 are mounted thus by said pinions 12 also gearing with the internal teeth *c* of the casing *a*, it is obvious that when the pinions 12 rotate over the said fixed teeth *c* motion will be transmitted to the disc 9.

Mounted also to revolve loosely upon the shaft 4, is a driving wheel 13 which

is fixed to the hand or winch wheel 14 thus as the hand or winch wheel 14 is rotated so also will be rotated the driving wheel 13 and this driving wheel 13 will transmit its motions to the pinions 12. By these pinions 12 being rotated over the fixed teeth *c* they transmit motion, as before stated, to the disc 9 and from this disc 9 motion is transmitted by the gearing wheel 10 to the pinions 7 so that by these latter travelling over the fixed teeth *c* they carry with them the disc 6 and therefore effect the driving of the shaft 4 and roller 5 as desired.

By the gearing wheels described being entirely enclosed by or within the casing *a* and its cover *b* not only are the gearing wheels entirely protected against damaging or injuring any person or article brought near them but provision is made for the insertion or placing of an appropriate plastic lubricant which will at all times lubricate all the moving surfaces within the casing described and that without entailing any liability of such lubricant flowing away and to the annoyance of the user and detriment to the cleanliness of the parts that may be brought into contact with the machine.

Although I have hereinbefore described my driving gear as being applicable for use in connection with a wringing or mangling machine it is obvious that same may be employed in connection with similar other apparatus.

Having now particularly described and ascertained the nature of my said inven-

tion and in what manner the same is to be performed, I declare that what I claim is:—

1. In driving gear of the type herein referred to for transmitting rotary motion to the roller of a wringing and mangling machine, the employment of a second disc which is fixed upon the shaft of the said roller and is arranged to carry a pinion which meshes with the internal teeth of the casing that is held against rotation as well as with a pinion carried by the other disc which runs loosely on the said roller's shaft substantially as herein specified.

2. In driving gear as claimed by Claim 1, the employment of an internally-toothed casing or wheel which is arranged to be held against rotation but which may move vertically or radially with the shaft which it encircles substantially as herein set forth.

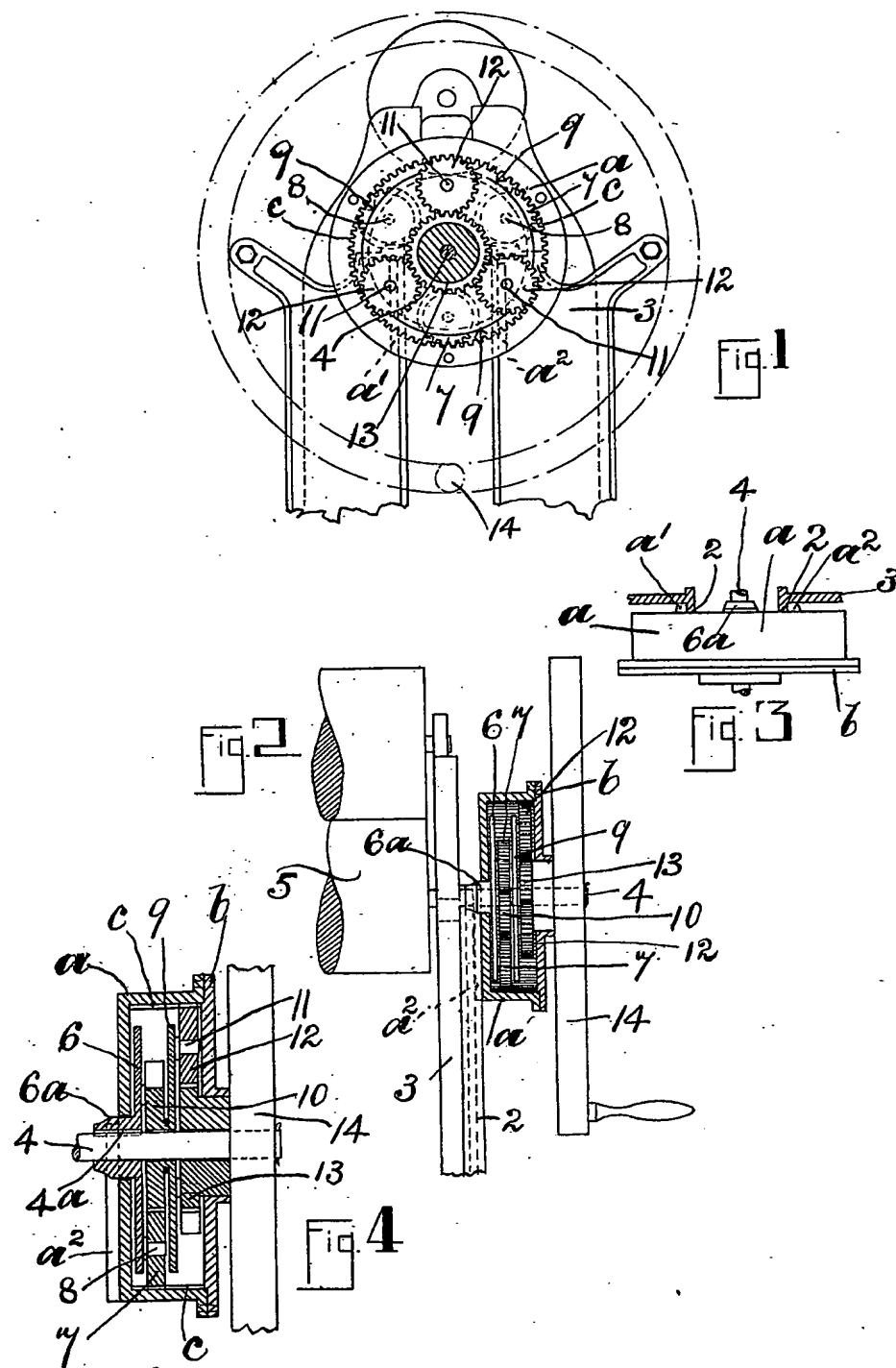
3. In driving gear as claimed by Claim 1, the employment of an internally toothed casing which is formed to act as a guard for the gearing wheels mounted within it substantially as herein described.

4. In driving gear as claimed by Claim 1, the employment of an internally-toothed casing formed so that it may contain lubricant substantially as herein set forth.

Dated the 11th day of September, 1924.

SAMUEL HEY,
Agent.

[This Drawing is a reproduction of the Original on a reduced scale.]



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